

Claims

1. A method for activating a Multimedia Broadcast/Multicast Service (MBMS) comprising the steps:

5 a. sending a message which carries MBMS bearer capabilities of a user equipment (UE) from the UE to a SGSN which the UE belongs to after passing authorization;

b. verifying whether the MBMS bearer capabilities of the UE are less than Required MBMS Bearer Capabilities, if the SGSN has the Required MBMS Bearer Capabilities; and

10 c. rejecting a request for activating an MBMS Context if the MBMS bearer capabilities of the UE are less than the Required MBMS Bearer Capabilities, or creating an MBMS UE Context if the MBMS bearer capabilities of the UE are not less than the Required MBMS Bearer Capabilities.

2. The method according to Claim 1, wherein the Step a comprises:

15 a1. creating a Packet Data Protocol (PDP) Context through interaction with a network and sending a joining message to the network via the SGSN which the UE belongs to; and

a2. receiving the joining message, implementing an authorization verification to the UE, and permitting the UE to activate an MBMS UE Context and send the
20 message which carries the MBMS bearer capabilities of the UE to the SGSN which the UE belongs to if the UE passes authorization;

3. The method according to Claim 1, wherein rejecting the request for activating the MBMS context in the step c, further comprises:

c11. sending a rejection message which carries a rejection reason to the UE;

25 c12. sending a failure message which carries a failure reason to a GGSN; and

c13. receiving the failure message and deciding whether to return back to an IP multicast access of a unicast mode.

4. The method according to Claim 1, wherein rejecting the request for activating the MBMS context in the step c, further comprises:

c21. sending a rejection message which carries a rejection reason to the UE; and

5 c22. receiving the rejection message and reapplying to receive the MBMS bearer service through a unicast mode.

5. The method according to Claim 1, rejecting the request for activating the MBMS context in the step c, further comprises:

c31. sending a failure message which carries a failure reason to a GGSN; and

10 c32. receiving the failure message and deciding whether to return back to an IP multicast access of a unicast mode.

6. The method according to Claim 1, rejecting the request for activating the MBMS context in the step c, further comprises:

c41. sending a failure message which carries a failure reason to a GGSN;

15 c42. receiving the failure message and deciding whether to return back to an IP multicast access of a unicast mode; and

c43. sending a rejection message which carries a rejection reason to the UE.

7. The method according to Claims 3, 4 or 6, wherein the rejection message sent to the UE further carries the Required MBMS Bearer Capabilities.

8. The method according to Claims 3 or 6, further comprising:

20 receiving the rejection message;

activating a timer;

verifying whether the GGSN having returned back to the IP multicast access of the unicast mode before time-out of the timer, stopping the timer if the GGSN having returned back to the IP multicast access of the unicast mode before time-out of the

timer, and reapplying to receive the MBMS bearer service through the unicast mode if the timer being overtime.

9. The method according to Claim 5 further comprising:

activating a timer after the step a of sending the message which carries the
5 MBMS bearer capabilities of the UE, stopping the timer if the UE receives an
accepting message or the GGSN returns back to the IP multicast access of the unicast
mode before time-out of the timer, and reapplying to receive the MBMS bearer
service through the unicast mode if the timer being overtime.

10. The method according to Claim 4, wherein the rejection message carries the
10 Required MBMS Bearer Capabilities, the UE compares the Required MBMS Bearer
Capabilities with the MBMS bearer capabilities of the UE after receiving the rejection
message, and the UE reapplies to receive the MBMS bearer service through the
unicast mode if the MBMS bearer capabilities of the UE are less than the Required
MBMS Bearer Capabilities.

11. The method according to Claims 3 or 6, wherein the rejection message
15 carries the Required MBMS Bearer Capabilities, the UE compares the Required
MBMS Bearer Capabilities with the MBMS bearer capabilities of the UE after
receiving the rejection message, and the UE reapplies to receive the MBMS bearer
service through the unicast mode if the MBMS bearer capabilities of the UE are less
20 than the Required MBMS Bearer Capabilities and the GGSN does not return back to
the IP multicast access of the a unicast mode.

12. The method according to Claim 1, wherein in the Step b, if the SGSN has not
the Required MBMS Bearer Capabilities and if the MBMS bearer capabilities of the
UE are less than the Required MBMS Bearer Capabilities, the SGSN deactivates the
25 created MBMS UE Context, and sends a failure message to a GGSN; the GGSN
receives the failure message and decides whether to return back to an IP multicast
access of a unicast mode.

13. The method according to Claim 12, further comprising:

receiving a rejection message sent from the SGSN;

activating a timer;

verifying whether the GGSN having returned back to the IP multicast access of the unicast mode before time-out of the timer, stopping the timer if the GGSN having returned back to the IP multicast access of the unicast mode before time-out of the timer, and reapplying to receive the MBMS bearer service through the unicast mode if the timer being overtime.

14. The method according to Claim 12, wherein the SGSN sends the failure message to the GGSN which creates a PDP Context with the UE, or to the GGSN which creates an MBMS UE Context with the UE.

10 15. The method according to Claim 12, wherein the rejection message carries the Required MBMS Bearer Capabilities, the UE compares the Required MBMS Bearer Capabilities with the MBMS bearer capabilities of the UE after receiving the rejection message, and the UE reappplies to receive the MBMS bearer service through the unicast mode if the MBMS bearer capabilities of the UE are less than the Required MBMS Bearer Capabilities and the GGSN does not return back to the IP multicast access of the unicast mode.

16. The method according to Claim 1, wherein in Step b, if the SGSN has no the Required MBMS Bearer Capabilities, the SGSN creates an MBMS UE Context; if the MBMS bearer capabilities of the UE are less than the Required MBMS Bearer Capabilities, the UE reappplies to receive the MBMS bearer service through the unicast mode after the SGSN deactivates the created MBMS UE Context or after the UE receives a rejection message sent from the SGSN.

17. The method according to Claim 16, wherein the rejection message sent from the SGSN to the UE carries the Required MBMS Bearer Capabilities; the UE compares the Required MBMS Bearer Capabilities with the MBMS bearer capabilities of the UE after receiving the rejection message, and the UE reappplies to receive the MBMS bearer service through the unicast mode if the MBMS bearer capabilities of the UE are less than the Required MBMS Bearer Capabilities.